NOAA EXPERIMENTAL DIVING UNIT
REPORT 91-02

VISUAL INSPECTION of ALUMINUM SCUBA CYLINDERS USED FOR RECREATIONAL NITROX DIVING

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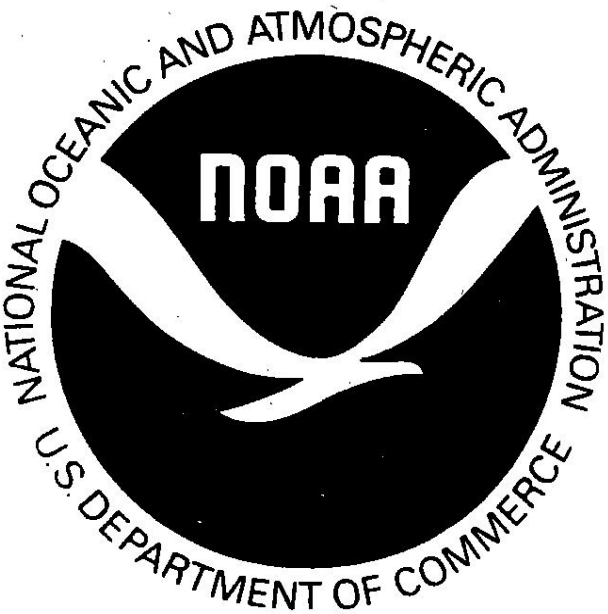

DIVING PROGRAM

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Visual inspections were conducted on 16 aluminum SCUBA cylinders used exclusively for recreational nitrox diving over a 4 year period. The cylinders were filled with NOAA Nitrox I (NNI, 68% N_2/32% O_2) and NOAA Nitrox II (NNII, 64% N_2/36% O_2) prepared by a partial pressure mixing system which utilized double filtered compressed air from an Ingersol-Rand Mod SR80 compressor and pure high pressure oxygen. The cylinders were not cleaned during the period of study.

Cylinder Types - Luxfer Aluminum 80 SCF
Cylinder Age (1st Hydro date) - 5/80 - 4/88
Range of refills - NNI (36-66), NNII (22-66)
Average # refills - NNI (50.75), NNII (37.19)
Cylinder use (time) - NNI (3yrs. 2mos. - 4 yrs.)
NNII (1yr. 10mos. - 2yrs. 1mo.)
Average cylinder use (time) - NNI (3yrs. 8mos.)
NNII (2yrs.)

Results:

1. Visual inspections were within normal limits.
2. No accumulations of hydrocarbons or other contaminants were apparent to visual inspection.

Key Words: Nitrox, SCUBA Cylinders, Visual Inspection, Corrosion

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